

## Message Text

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ORIGIN OES-07

INFO OCT-01 EA-10 ISO-00 ACDA-12 CIAE-00 INR-10 IO-13  
L-03 NSAE-00 NSC-05 EB-08 NRC-05 SOE-02 DODE-00  
DOE-15 SS-15 SP-02 CEQ-01 PM-05 /114 R

DRAFTED BY OES/NET/EIC: D B HOYLE:SMJ  
APPROVED BY OES/NET/EIC: D B HOYLE  
ACDA: R WILLIAMSON  
DOE/IA: S CEJA  
EA/K: F MISCH

-----065751 150730Z /21  
R 150009Z JUN 78  
FM SECSTATE WASHDC  
TO AMEMBASSY SEOUL

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E.O. 11652: N/A

TAGS: TECH, ENRG, KS

SUBJECT: FUEL FOR KORR-2 RESEARCH REACTOR

REF: STATE 88681

1. ON MAY 9 EXECUTIVE BRANCH RECOMMENDED TO NRC THAT TWO  
EXPORT LICENSES BE ISSUED FOR TOTAL OF 107 TRIGA FLIP-TYPE  
ELEMENTS ENRICHED TO 70 U-235 FOR USE IN KORR-2 REACTOR.  
NO ACTION HAS BEEN TAKEN ON THIS RECOMMENDATION BY NRC TO  
DATE.

2. IN LATE MAY, AT VIENNA MEETING OF IAEA ADVISORY GROUP  
ON RESEARCH REACTOR RENEWAL AND UPGRADING PROGRAM, GENERAL  
ATOMIC ISSUED STATEMENT THAT IT HAD DEVELOPED AND WAS  
PREPARED TO MAKE IMMEDIATELY AVAILABLE URANIUM ZIRCONIUM  
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HYDRIDE FUEL ENRICHED TO 20 U-235 AS SUBSTITUTE FOR TRIGA  
FUEL PRESENTLY ENRICHED TO EITHER 70 OR 93 U-235. THIS  
CHANGE IS POSSIBLE BY INCREASING THE URANIUM CONTENT OF  
SUCH FUEL FROM THE PREVIOUS 12 WEIGHT PERCENT TO EITHER  
20 OR 45 WEIGHT PERCENT. THE LOWER ENRICHED FUEL SHOULD  
HAVE ESSENTIALLY THE SAME COST AND PERFORMANCE AS PRESENT  
70 ENRICHED FUEL.

3. GENERAL ATOMIC'S DEVELOPMENT OF THIS FUEL WAS IN RESPONSE TO USG PROGRAM TO REDUCE UTILIZATION OF HIGHLY ENRICHED URANIUM AS RAPIDLY AS POSSIBLE TO LOWEST FEASIBLE LEVEL, AND WORK WAS PARTIALLY FUNDED BY DOE UNDER PROGRAM DESCRIBED IN REFTTEL. AS CHAIRMAN OF WORKING GROUP 8, SUBGROUP C, OF INFCE ON RESEARCH REACTORS, WE BELIEVE THAT KOREA SHOULD HAVE A SPECIAL INTEREST IN THIS DEVELOPMENT.

4. GENERAL ATOMIC WILL BE CONTINUING TESTS OF THE NEW LOW ENRICHED FUEL IN SEVERAL IRRADIATION FACILITIES, BUT WE BELIEVE THAT FURTHER EARLY DEMONSTRATION WOULD BE HIGHLY DESIRABLE. WE HAVE INFORMALLY DISCUSSED WITH GENERAL ATOMIC THE POSSIBILITY OF ITS PROVIDING SOME OF THESE NEW 20 ENRICHED ELEMENTS IN LIEU OF THE 70 ELEMENTS COVERED BY THE PRESENT EXPORT LICENSE APPLICATIONS. GENERAL ATOMIC BELIEVES THAT, WITH KAERI AGREEMENT, IT COULD SUBSTITUTE AT LITTLE OR NO ADDITIONAL COST, SOME SIX TO EIGHT OF THE NEW TYPE 20 ENRICHED ELEMENTS FOR 70 ENRICHED ELEMENTS PROVIDED FOR IN THE CURRENT CONTRACT. IF IT WERE TO DO SO, GENERAL ATOMIC BELIEVES THAT ONE OR TWO OF THESE ELEMENTS SHOULD BE INSTRUMENTED TO OBTAIN MAXIMUM DATA FROM THE TEST. IN ORDER TO IMPROVE STATISTICAL RELIABILITY, DOE BELIEVES THAT IT WOULD BE PREFERABLE TO INCREASE THE NUMBER OF 20 ELEMENTS IN KORR-2 TO AT LEAST TWELVE (PERHAPS MORE) AND IS PREPARED TO EXPLORE MEANS BY WHICH THESE ADDITIONAL LIMITED OFFICIAL USE

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ELEMENTS MIGHT BE MADE AVAILABLE AT COMPARABLE COST TO KOREA. WE WOULD, OF COURSE, WISH TO SEE ALL OF THESE 20 ELEMENTS INSERTED IN THE REACTOR AT THE EARLIEST FEASIBLE DATE.

5. BEFORE FURTHER EFFORTS ARE EXPENDED TO DEVELOP SUCH A DEMONSTRATION OF 20 ENRICHED TRIGA FUEL, WE WOULD LIKE EMBASSY TO SOUND OUT KOREANS TO DETERMINE WHETHER THEY ARE PREPARED TO COOPERATE IN PRINCIPLE, STRESSING IMPORTANT CONTRIBUTIONS WHICH COLLABORATION BETWEEN OUR TWO COUNTRIES COULD MAKE TOWARD INFCE. IF SO, WE COULD THEN PROCEED TO WORK OUT CONTRACTUAL, TECHNICAL AND ECONOMIC DETAILS. REQUEST THAT KAERI BE APPROACHED ON THIS MATTER AND ITS REACTION REPORTED SOONEST. YOU MAY ASSURE KAERI CONTACTS THAT THEIR AGREEMENT TO PARTICIPATE IN SUCH A DEMONSTRATION SHOULD IN NO WAY SLOW DOWN DELIVERY OF 70 FUEL NEEDED FOR OPERATION OF KORR-2 AND COULD, IN FACT, HAVE A FAVORABLE IMPACT ON NRC CONSIDERATION OF THE PENDING EXPORT LICENSE APPLICATIONS. CHRISTOPHER

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## Message Attributes

**Automatic Decaptioning:** X  
**Capture Date:** 01 jan 1994  
**Channel Indicators:** n/a  
**Current Classification:** UNCLASSIFIED  
**Concepts:** RESEARCH, FUELS, NUCLEAR REACTORS, EXPORT LICENSES  
**Control Number:** n/a  
**Copy:** SINGLE  
**Draft Date:** 15 jun 1978  
**Decaption Date:** 01 jan 1960  
**Decaption Note:**  
**Disposition Action:** RELEASED  
**Disposition Approved on Date:**  
**Disposition Case Number:** n/a  
**Disposition Comment:** 25 YEAR REVIEW  
**Disposition Date:** 20 Mar 2014  
**Disposition Event:**  
**Disposition History:** n/a  
**Disposition Reason:**  
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**Document Number:** 1978STATE151719  
**Document Source:** CORE  
**Document Unique ID:** 00  
**Drafter:** D B HOYLE:SMJ  
**Enclosure:** n/a  
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**Errors:** N/A  
**Expiration:**  
**Film Number:** D780249-1098  
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**Original Classification:** LIMITED OFFICIAL USE  
**Original Handling Restrictions:** n/a  
**Original Previous Classification:** n/a  
**Original Previous Handling Restrictions:** n/a  
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**Previous Handling Restrictions:** n/a  
**Reference:** 78 STATE 88681  
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**Review Action:** RELEASED, APPROVED  
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**Review Event:**  
**Review Exemptions:** n/a  
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**Status:** NATIVE  
**Subject:** FUEL FOR KORR-2 RESEARCH REACTOR  
**TAGS:** TECH, ENRG, KS  
**To:** SEOUL  
**Type:** TE  
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**Review Markings:**  
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